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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/792,317 | 03/02/2004 | Jac Hyoung Kim | 2080-3234 | 4391 |

35884 7590 09/28/2007
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| EXAMINER |
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BURD, KEVIN MICHAEL

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| ART UNIT | PAPER NUMBER |
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2611

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09/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/792,317

Applicant(s)

KIM ET AL.

Examiner

Kevin M. Burd

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-14 is/are allowed.
- 6) ☒ Claim(s) 1,3-7 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

1. This office action, in response to the amendment filed 8/7/2007, is a final office action.

Response to Arguments

2. The previous claim objection and claim rejection under 35 USC 112, first paragraph are overcome in view of the amendment.
3. Applicant's arguments filed 8/7/2007 have been fully considered but they are not persuasive. Applicant states Huh does not disclose a CIR masking unit or removing a noise included in the CIR estimating value. The examiner disagrees. As stated in the previous office action, Huh discloses a channel estimator 219 that performs channel estimation on the channel impulse response of the channel and provides the channel response to the channel equalizer 220. The channel equalizer 220 removes the interference (noise) from the received signal (column 5, lines 31-45). The components that remove the noise are the CIR masking unit. The channel is estimated and the noise is removed from the received signal and therefore from the channel estimate. The newly added limitations of amended claims 1 and 15 were addressed in the previous rejection of claim 2. The noise elimination circuit of figure 3 of Ono discloses the claimed limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huh et al (US 7,161,972) in view of Ono et al (US 6,255,898).

Regarding claims 1, 3-5 and 15, Huh discloses the receiver shown in figure 2. A channel estimator 219 performs channel estimation on the channel impulse response of the channel and provides the channel response to the channel equalizer 220. The channel equalizer 220 removes the interference (noise) from the received signal (column 5, lines 31-45). Huh does not disclose a mask signal generator, a delayer and a masking processor. Ono discloses the noise elimination circuit shown in figure 3. The circuit comprises an envelope waveform generating circuit 86 (mask signal generator) for generating a mask signal according to an input (column 1, lines 33-38). A delay unit delays the input signal so the delayed signal and the output from the envelope circuit are in synchronization (column 1, lines 25-48). An operational amplifier circuit 88 (masking processor) detects the noise and removes it from the output signal (column 1, lines 38-48). Ono discloses this circuit will remove low frequency noise that is present in the system (column 1, lines 10-15). By removing this noise, the originally desired signal can be recovered and input to down stream components quickly. For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Ono into the circuit of Huh.

Regarding claims 6 and 7, Ono discloses combining the signals as shown in figure 3.

Allowable Subject Matter

5. Claims 8-14 are allowed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M. Burd
9/25/2007


KEVIN BURD
PRIMARY EXAMINER